CBCS SCHEME

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22SCS/SCN13

First Semester M.Tech. Degree Examination, Dec.2023/Jan.2024
Advances in Computer Networks

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	With a supporting diagram, describe the process of cost effective resource sharing.	10	L1	CO1
	b.	What is the need of Layering? Describe the TCP/IP architecture used for internet based applications.	10	L1	CO1
		OR			
Q.2	a.	What do you mean by Delay X Bandwidth product? Explain how it is influencing High – Speed Networks.	10	L3	CO2
	b.	Explain Reliable Transmission Strategy with a brief explanation of any of the Automatic Repeat Request (ARQ) algorithms.	10	L3	CO2
		Module – 2			
Q.3	a.	What is the need of DHCP? Explain its working with suitable diagrammatic representation.	10	L2	CO3
	b.	Give the details of forwarding tables used in datagram and virtual circuit switching. Illustrate source routing with a diagram.	10	L2	CO3
		OR			
Q.4	a.	How do you describe Virtual Private Network (VPN)? Justify your answer with an IP tunnel as a virtual link.	10	L1	CO1
	b.	Explain Address Resolution Protocol (ARP) for mapping IP addresses into Ethernet addresses.	10	L1	CO1
		Module – 3			
Q.5	a.	Describe Routing Information Protocol (RIP), with an example network running on it. Also describe its RIP_{V2} packet format briefly.	10	L1	CO1
	b.	Define The Open Shortest Path First Protocol (OSPF) features to the basic link – state algorithm along with its header format.	10	L1	CO1
		OR			
Q.6	a.	Discuss the challenges in Inter domain Routing and mention how to overcome that using BGP (Border Gateway Protocol).	10	L2	CO3
	b.	Describe the features of IPV_6 and header with a neat block diagram.	10	L1	CO1

		Module – 4			
Q.7	**a.**	Describe Simple Demultiplexer along with its header format. Also explain the message queue strategy of UDP (User Datagram Protocol).	**10**	**L2**	**CO3**
	b.	What is End – to – End issues? Explain how TCP addresses these issues.	**10**	**L2**	**CO3**
		OR			
Q.8	**a.**	Describe the process of TCP oriented reliable byte streaming with the connection establishment / termination implemented to control the flow.	**10**	**L3**	**CO2**
	b.	Define Triggering Transmission with an example of Silly Window Syndrome.	**10**	**L2**	**CO3**
		Module – 5			
Q.9	**a.**	What do you mean by Congestion – Avoidance Mechanism? Explain the RED (Random Early Detection) mechanism for Congestion – Avoidance.	**10**	**L2**	**CO3**
	b.	Mention Domain Hierarchy with respect to the DNS (Domain Name System) to identify hosts.	**10**	**L1**	**CO1**
		OR			
Q.10	**a.**	Discuss the process of Network Management using SNMP (Simple Network Management Protocol) with its specialized request / reply procedure.	**10**	**L2**	**CO3**
	b.	Define Source – Based Congestion Avoidance in detail.	**10**	**L2**	**CO3**

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